Taiwan's EMC Requirements for Telecommunication Devices

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Abstract – For uninterntional radiators, Taiwan has enforced EMC requirements since 1997. The regulatory agencies are the Bureau of Standards, Metrology and Inspection (BSMI, formally BCIQ) and The Directorate General of Telecommunications (DGT). BSMI is in charge of non-telecommunication devices, while the DGT is in charge of telecommunication devices. Intentional radiators have been regulated since 1989. All intentional radiators, including wireless devices, are regulated by the DGT. The EMC management system can seem to be complicated. This paper provides the readers with a communication channel to understand and follow the regulations and to also speed up the process of exporting telecommunication products into Taiwan.

Introduction

On June 28, 2000, the BSMI and the DGT jointly announced that telephones, fax machines, and cordless phones are regulated under the DGT, not the BSMI, effective immediately.

EMC requirements for fax machines, modems, and communication interface cards have been enforced by the BSMI before the DGT took over. The DGT honors the BSMI's enforcement. For the other Telecommunication Terminal Equipment (TTE), the enforcement date is June 28, 2002.

The DGT type approval procedure is similar to the BSMI's. However, there are several differences between the BSMI's and DGT's which must be addressed.

I. DGT Type Approval Process

The DGT type approval process is shown in Figure 1. A sample format of the Certificate is shown in Figure 2 (next page). It is issued in Chinese.

II. Application Package for Type Approval

A type approval application package includes the following documentation:

1. Application Form

The EMC compliance approval application form from the DGT is different as from the BSMI due to different agencies.

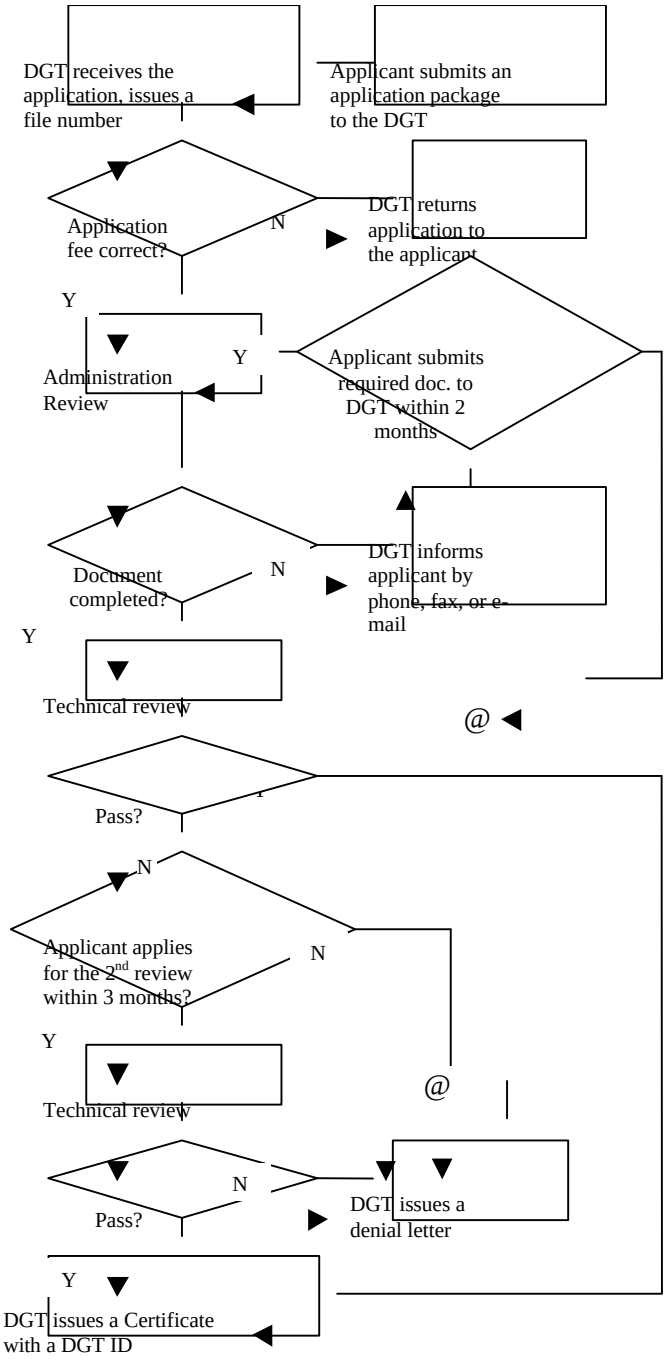

Figure 1. DGT Type Approval

交通部電信總局
(或○○驗證機構名稱)
電信終端設備審定證明

一、 設備名稱：
二、 廠　　牌：
三、 型　　號：
四、 製造廠商：
五、 申請廠商：
六、 審定類別：
七、 審定日期：　　年　　月　　日
八、 審驗合格標籤式樣：

交　通　部　電　信　總　局
審　驗　合　格　標　籤
號碼：

(用印處)

蓋驗證機關(構)之章

說明：

(一) 經審驗合格之電信終端設備，送審廠商應依審定證明中所核給之審驗合格標籤式樣，自製標籤標貼或印鑄於設備本體適當位置，始得販賣。

(二) 審驗合格標籤之使用權專屬取得審定證明之人。持有同廠牌同型號電信終端設備之他人應經原取得審定證明之人同意，並檢附同意證明報請電信總局備查後，始得使用該審驗合格標籤。

(三) 取得審定證明之電信終端設備，有下列情形之一者，得撤銷或廢止審定證明：
1. 經發現原審定設備確有變更其型號、設計、性能，而未重新申請審驗者。
2. 經確定原審定設備未依新修正技術規範公告所定實施期限及方式辦理審驗者。
3. 經發現申請審驗時所檢附之資料為偽造或虛偽不實者。
4. 經抽驗未能符合電信終端設備技術規範者。

(四) 輸入或販賣未經審驗合格之電信終端設備者，依電信法第六十七條規定處新台幣三萬元以上三十萬元以下罰鍰，並得沒入其設備。

(五) (驗證機構核發審定證明，係經交通部電信總局委託辦理。)

備註：

Figure 2. DGT Certificate

The application form can be either in a hard copy format or in a soft copy format (personal document format, PDF). It can be either in Chinese or in English. The Microsoft Word 97 format of the forms can be downloaded from the DGT web site: www.dgt.gov.tw. The application form also requires local contact information and a company or agent stamp to provide proof of ownership.

There are two formats of the application form: one is for the equipment for public sale ("sale use" or "for manufacturer"), the other one is for private use ("private use" or "for personal"). It is important to use a correct application form. The application for public sale equipment is required to include more technical information than the private use one.

The application form from the Public Telecommunications Department (PTD) of the DGT is different as from the Radio Wave Regulatory Department (RWRD) of the DGT. The PTD is in charge of the radio equipment which connects to the public network. It includes, but not limited to, cellular phones, pagers, spread spectrum cordless phones, trunking radios, mobile data. Radio equipment not regulated by the PTD is regulated under the RWRD. It includes, but not limited to, low power radio-frequency devices (spread spectrum devices excluding cordless phones, wireless microphones, etc.), family radio transmitters.

The application form for the equipment regulated under the PTD written in Chinese, titled: "Application Form for Compliance Approval of TTE," is shown in Figure 3a ("Sale Use") and 3b ("Private Use," next page). The application form for the equipment regulated under the RWRD is titled: "Type-approval for low-power radio-frequency devices Application Form." The application form from both PTD and RWRD is similar, but not identical.

2. *Application Fee*

The application fee is NT$1,000.00 for a type approval application. The fee must be in Taiwan dollars in the form of a bank check or fund and make payable to the DGT account (account no.: 054031047144) under the Bank of Taiwan, Hsin-Yi Branch.

供販賣電信終端設備審驗申請表

申　請　人：□商號或團體　　　□公司
代表人：
性　　質：□製造商　□進口商　□販賣商
地　　址：
連　絡　人：
電　　話：
設　備　名　稱：
廠　　牌：
型　　號：
製造廠商名稱：
[illegible]：

1. 下列相關證件影本各一份：（應包括正反兩面，均書明與正本相符並加蓋申請人及代表人印章，必要時，交通部電信總局或其認可之驗證機構得要求檢視正本）
①國內廠商
申請人應檢附公司執照、營利事業登記證或工廠登記證 .... (　)
②外國製造商
申請人應檢附該製造商之設立相關證明文件 .... (　)
③電信管制射頻器材
進口商應檢附交通部電信管制射頻器材進口許可證及電信管制射頻器材經營許可執照 .... (　)
製造商應檢附電信管制射頻器材經營許可執照 .... (　)

2. 技術資料
①設備樣品 3X5 吋以上彩色照片（廠牌型號及電路板零組件須清晰可辨讀，如為限於室內使用之無線終端設備應標示「本設備限在不干擾合法電台及不受被干擾保障條件下使用」於設備明顯處） .... (　)
②使用手冊及規格資料... (　)
③電路方塊圖或電路圖... (　)
④設備樣品檢驗報告正本....................................... (　)
⑤其他經交通部電信總局指定之資料：(　　　　　　　　)..(　)

申請日期：　年　　月　　日
申請人（公司）蓋章：　　　　　負責人蓋章：

受理日期：　年　　月　　日　　　承辦人員簽章：

Figure 3a. DGT Application Form, TTE ("Sale Use")

供自用電信終端設備審驗申請表

申　　請　　人：☐ 個人　☐商號或團體　☐法人

代表人：

地　　　　址：

連　絡　人：

電　　　　話：

設 備 名 稱：

廠　　　　牌：

型　　　　號：

設 備 序 號：

[illegible]：

1. 相關證件影本：（應包括正反兩面，均書明與正本相符並加蓋申請人印章，必要時，交通部電信總局得要求檢視正本）

①個人

申請人應檢附身分證明 ....( )

②法人或團體

申請人應檢具該法人或團體設立之證明文件 ....( )

2. 技術資料

①設備樣品檢驗報告正本..( )

②其他經交通部電信總局指定之資料：(　　　　　　　　　)......( )

3. 設備樣品(驗畢發還)...( )

申請日期：　年　月　日

申請人（公司）蓋章：　　　　　　負責人蓋章：

受理日期：　年　月　日　　　　　承辦人員簽章：

Figure 3b. DGT Application Form, TTE ("Private Use")

3. Manufacturer's Identification

The applicant shall submit a copy of the company/manufacturer business license. DGT reserves the right to request the original license.

For controlled telecommunication radio-frequency devices, if the applicant is an importer, the import permit issued by the Ministry of Transportation and Communication, and license of operation are required to be submitted with the application. If the applicant is a manufacturer, only the license of operation is required.

The identification document must include both front and rear sides, clearly noting that they are identical to the original copy, and shall be affixed with the applicant's seal/signature. The DGT may request the original document.

4. Technical Documents

a) ***Product Photographs.*** The size of the photographs must be 3"x5" or larger, in color. The product's brand name, model number, and parts/components on the circuit board shall be clearly identifiable. For digital photographs, the photograph pages must be waterproof. They can be printed out by a color laser printer or be laminated if printed out by an inkjet printer.

Warning Label. For an indoor wireless TTE product, a warning with the statement: "? " (The equipment should only be used not to interfere with any legal stations and must accept any interference received.). This statement must be in Chinese and shall be marked on a clearly visible part of the TTE.

b) ***User's Manual and Specification.*** The user's manual must be in Chinese. The specification can be either in Chinese or in English.

c) ***Circuit Block Diagram and Schematics.*** A circuit block diagram and schematics must accompany the application.

d) ***Test Report.*** An original test report is required. A test report shall contain the following information:

- Equipment name, brand name and model number
- Measurement setup diagram and description
- A list of test instrument, including description, manufacturer, model number, etc.
- Test standard(s) and test item(s)
- Test data and verdict of test results
- Date of receiving the product and completion of testing

III. Submitting a Type Approval Application to the DGT

The DGT application(s) can be submitted to either the DGT or the RCB (Recognized Certification Body). The RCB in Taiwan is similar to the TCB in the U.S.. At the time of this writing, all the DGT applications must be submitted to the main office of the DGT, located at No. 16, Sec. 2, Chihnan Road, Taipei, Taiwan, ROC.

IV. Type Approval Time Frame

The average approval time for an application is about two (2) weeks. This time schedule does not include the lag time from the applicant.

V. Series Product Filing

"Series" product filing is the method used when seeking approval for a product family. Series filing can be included in

the Primary filing, or can be filed separately after the Primary application is granted. When filing separately, not at the same time, a new DGT ID will be assigned for the Series product. The Series product does not carry the same DGT ID as the Primary one. The models in the Series must be clearly specified in the application.

VI. Composite Device(s)

For a composite device that is subject to both BSMI and DGT requirements (such as a computer motherboard with a build-in modem), EMC compliance testing need only to be performed once. The applicant has two ways to obtain EMC approval. The first way is to obtain two copies of the test report from the test laboratory, one copy for the BSMI approval, and the other copy for the DGT approval. Then apply for the BSMI and DGT approvals concurrently. The second way is to obtain an EMC Certificate from the BSMI first, then attach this Certificate with the required document for telecom network interface and/or safety approval to the DGT. The DGT honors the EMC approval granted from the BSMI.

VII. Equipment Labeling

A sample format of the DGT label is shown in Figure 4. Typically, the DGT ID number is given after the application is approved. If requested by the applicant, the DGT gives a DGT ID number right after receiving the application.

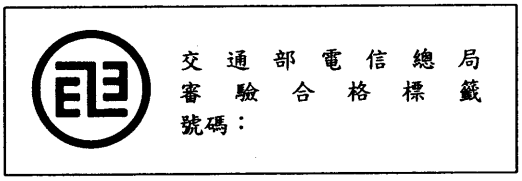

Figure 4. DGT Label

For indoor wireless TTE products, a warning statement in Section II. 4. a) is required.

A cellular phone must have a warning label and list the level of human exposure to radio-frequency (RF) radiation. It is the specific absorption rate (SAR). The content of the warning is "? ? ? ? ? ? ? ? , ? ? ? ? ? ? ? ." (Please limit exposure to reduce the affect of electromagnetic energy.) The content of the SAR level is "? SAR? ? ? 1.6W/Kg; ? ? ? ? ? ? ? ? : ___ W/Kg? ." (SAR limit is 1.6W/Kg; the actual SAR level from the submitted test sample is ___ W/Kg.) This requirement is voluntary since January 1, 2001. It is mandatory after July 1, 2001.

VIII. Compliance Requirements for Spare/Repair Parts

Both BSMI and DGT do not require EMC compliance for spare/repair parts. However, the procedure to claim spare/repair parts follows:

1) The agent/importer must provide the necessary paperwork to the Taiwan customs department in order to receive/release spare parts or peripherals.
2) The agent/importer has six months to use spare parts. If the agent cannot use spare parts within six months, the agent must request a six month extension.
3) The agent submits a repair record, including customer's contact information, to the customs department after the repair work is completed.

IX. Test Standard

For telecommunication devices that are unintentional radiators, the EMC test standard is Chinese National Standard (CNS) 13438: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment. It is similar to CISPR 22 with some changes[1]. CNS standards can be ordered from:

Bureau of Standards, Metrology and Inspection
Information Center
No. 4, Sec. 1, Chihnan Road
Taipei, Taiwan
Telephone Number: 2-2343-1978
Fax Number: 2-2343-1986

For telecommunication devices that are intentional radiators, EMC test standards are published by the DGT. A list of EMC standards for the intentional radiators can be found from the DGT web site. For low power radio-frequency devices (LPD), the test standard is LP0002: "Low-power Radio-frequency Devices Technical Specifications". It is similar to the FCC (47 CFR) Part 15, Subpart C, with some changes. For other than LPD, each type of equipment has its own test standard. Where the test standard(s) is not available, testing shall be performed in accordance with the following order: National standards (CNS), Standards specified by the international standard organization, or Standards specified by the regional standard organization

For design engineers, information of the restricted band of operation must be made public. This information can be found from Section 2 of LP0002. For example, a spread spectrum device operating at 902-928 MHz is prohibited, due to the restricted band of operation in 825-915 MHz.

X. Laboratory Accreditation

The DGT has authorized the Chinese National Laboratory Accreditation (CNLA) as a recognized accreditation body. Effective December 31, 1998, laboratory accreditation is performed by the CNLA. A list of DGT recognized testing laboratories (RTL), accredited by the CNLA, can be found

from the DGT web site. There is no recognized certification body (RCB), which is mentioned in the regulations, existed at the time of this writing.
A laboratory accredited by the Chinese National Laboratory Accreditation (CNLA) is qualified to issue a test report per DGT. For an unintentional radiator, a test laboratory accepted by the BSMI is accepted by the DGT. A list of BSMI accepted test laboratories can be found from the BSMI web site: www.bsmi.gov.tw.

Under bilateral or multilateral TTE mutual recognition agreements or arrangements signed between Taiwan and other countries, regional organizations, or international organizations, the DGT may accept the TTE test report, compliance certificate or Declaration of Conformity issued under the said agreements or arrangements.

On August 5, 1999, the DGT, the ACA, the OFTA, and the IDA (formally TAS) concurrently announced to use APLAC MRA to implement the phase I of APEC TEL MRA. Based on this MRA, the DGT accepts a test report issued by a test laboratory recognized by the accreditation bodies, the members of APLAC, including the CNLA (Chinese Taipei), HOKLAS (Hong Kong, China), NATA (Australia) and SAC-SINGLAS (Singapore).

XI. DGT contacts

DGT can be reached by e-mail at window@dgt.gov.tw, or fax at 2-2343-3600 (PTD) and 2-2343-3857 (RWRD). For those who reside in the US, you may wish to contact the office of the Minister of Economic Affairs (MOEA) in Washington, DC, USA (Tel: 202-686-6400; Fax: 202-363-6294). The MOEA office is able to forward your concerns to the appropriate person, and then will follow up with a reply.

Summary

Starting June 28, 2002, all telecommunication terminal equipment must obtain DGT compliance approval before being placed on the Taiwan market. Telecommunication terminal equipment must meet the following compliance approval requirements: telecommunication network interface, electromagnetic compatibility (EMC, CNS 13438), and safety (CNS 14336).

With the splitting of EMC responsibilities between the BSMI and DGT, the management system seems complex. Remember! For unintentional radiator, the BSMI is the key player in Taiwan, while the DGT is the key player for the intentional radiators.

Acknowledgment

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References:

1. Grace Lin and Michael J. Alvarado, “A comparison of CNS 13438: 1997 and CISPR 22: 1993,” *Compliance Engineering*, November/December 1999, pp. 58-60.